WHAT IS CLAIMED IS:

1. An improved method for producing a biaxially oriented thermoplastic tube, wherein a tubular preform having a wall thickness is extruded from thermoplastic material using an extruder having an output, which extruder is provided with an extruder die having an inner core, the inner core defining a hollow space in the preform, wherein the preform is subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a mandrel, which mandrel comprises an expansion part, which brings about an expansion in the circumferential direction of the tempered preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in axial direction and in circumferential direction of the tube, wherein said biaxially oriented tube is cooled, said preform having a preform advancement speed upstream of the mandrel, which preform advancement speed is set by means of a preform speed-control means which acts on the preform upstream of the mandrel, and whertein said tube has an adjustable tube advancement speed downstream of the mandrel, said tube advancement speed being set by means of a drawing device which acts on the tube downstream of the mandrel,
the improvement including the measure that - by periodical variation of the ratio of the preform advancement speed, on the one hand, and the output of the extruder, on the other hand, between a plurality of different values - the wall thickness of the preform is periodically changed.

2. A method according to claim 1, in which the ratio of the preform advancement speed, which is determined by the preform speed-control means, on the one hand, and the output of the extruder, on the other hand, is kept substantially constant at a first value for a first period, so that the preform then acquires a first wall thickness, and is set to one or more

values which differ from the first value for a second period, which is considerably shorter than the first period.

3. A method according to claim 1, in which the output of the extruder is varied periodically and in which the preform advancement speed is kept substantially constant.

4. A method according to claim 1, in which the output of the extruder is kept substantially constant and in which the preform advancement speed is varied periodically.

5. A method according to claim 1, in which the output of the extruder is kept substantially constant and in which the preform advancement speed is varied periodically, and in which the tube advancement speed of the tube downstream of the mandrel is varied periodically in such a manner that the ratio of the tube advancement speed, on the one hand, and of the preform advancement speed, on the other hand, is kept substantially constant.

6. A method according to claim 1, in which the ratio of the preform advancement speed, on the one hand, and the output of the extruder, on the other hand, is kept substantially constant at a first value for a first period, so that the preform then acquires a first wall thickness, and is set to one or more values which differ from the first value for a second period, which is considerably shorter than the first period, and in which, in a period during which a part of the preform with a wall thickness which is greater than the first wall thickness is being forced over the mandrel or for part of this period, the ratio of the tube advancement speed, on the one hand, and the preform advancement speed,on the other hand, is greater in a period during which a part of the preform with the first wall thickness is being forced over the mandrel, in such a manner that a tube part with the greater wall thickness acquires a greater axial stretching than a tube part with the first wall thickness.

7. A method according to claim 1, in which the biaxially oriented tube downstream of the expansion part of the mandrel is cooled in such a manner that the cooled tube does not undergo any further axial stretching and the generation of the axial orientation is concentrated in a section between a speed-control means for the preform and a downstream end of the mandrel.

8. A method according to claim 1, in which the biaxially oriented tube downstream of the expansion part of the mandrel is cooled in such a manner that the cooled tube does not undergo any further axial stretching and the generation of the axial orientation is concentrated in a section between a plurality of preform speed-control means for the preform which are arranged upstream of the mandrel.

9. A method according to claim 1, in which the preform downstream of the extruder die is subjected to calibration of the external diameter of the preform, so that the preform acquires a uniform external diameter and a preform section with a greater wall thickness has a smaller internal diameter than the adjoining parts of the preform with a smaller wall thickness.

10. A method according to claim 1, in which the preform downstream of the extruder die is subjected to calibration of the internal diameter of the preform, so that the preform acquires a uniform internal diameter and a preform part with a greater wall thickness has a greater external diameter than the adjoining parts of the preform with a smaller wall thickness.

11. A method according to claim 1, in which the preform is tempered such that a preform part with a larger wall thickness on average is at a higher temperature, measured at a location immediately upstream of the expansion mandrel, than an immediately adjoining downstream preform part with a smaller wall thickness which is already on the mandrel.

12. A method according to claim 1, in which a series of a plurality of parts with a larger wall thickness which are located relatively close together is created in the preform, followed by a considerably longer preform section with a uniform, smaller wall thickness.

13. A method according to claim 1, in which the biaxially oriented tube, in a section between the downstream end of the mandrel and the drawing device, is subjected to calibration of the external diameter of the tube.

14. A method according to claim 1, in which the biaxially oriented tube downstream of the drawing device is divided at or next to a tube part with a larger wall thickness, so that tube sections are obtained which at one or both axial ends have an end part with a greater wall thickness than the remainder of the tube section, which has a uniform, smaller wall thickness.

15. A method for producing a socketed biaxially oriented thermoplastic tube starting from a prefabricated tube of biaxially oriented thermoplastic material having a tube body and an integral end part at at least one end of said tube body, said end part having a greater wall thickness than the tube body, the axial stretching of the end part being at least equal to the axial stretching of the tube body, the method comprising the step of subject an end part of said prefabricated tube to a socket-forming operation.

16. A method according to claim 15, in which an end part of the prefabricated tube has a plurality of annular areas which adjoin one another and have a wall thickness which varies from annular area to adjoining annular area, the wall thickness of a plurality of the annular areas being greater than the wall thickness of the tube body.

17. A method according to claim 15, in which an end part of the prefabricated tube has a plurality of annular areas which adjoin one another and have a wall thickness which varies from

annular area to adjoining annular area, the wall thickness of a plurality of the annular areas being greater than the wall thickness of the tube body, and in which an annular area of said end part having a larger wall thickness than the tube body is deformed, during said socket-forming operation, into an outwardly bulging groove wall, which delimits an internal groove in the socketed tube for the accommodation of a sealing ring.

18. A method according to claim 15, in which an end part of the prefabricated tube has a plurality of annular areas which adjoin one another and have a wall thickness which varies from annular area to adjoining annular area, the wall thickness of a plurality of the annular areas being greater than the wall thickness of the tube body, and in which an annular area of said end part with a larger wall thickness projects inwardly with respect to the internal diameter of the tube body following the socket-forming operation.

19. A biaxially oriented thermoplastic tube, which tube has a tube body and, at one or both ends, an integrally formed socket, said tube having an axial stretching of the plastics material in the socket which is substantially equal to the axial stretching of the thermoplastic material in the tube body.

20. A biaxially oriented thermoplastic tube, which tube has a tube body and, at one or both ends thereof, an integrally formed socket, the socket having an outwardly bulging groove wall which delimits an internal groove in the tube for the accommodation of a sealing ring, wherein the groove wall has a wall thickness which is greater than or equal to adjacent parts of the socket which have a smaller diameter.

21. A biaxially oriented thermoplastic tube, which tube has a tube body and, at one end, an integrally formed socket and, at the other end, a spigot designed to fit into a socket of a similar tube, wherein the spigot has a greater wall thickness than the tube body.

22. An improved method for producing a biaxially oriented thermoplastic tube, wherein a tubular preform having a wall thickness is extruded from thermoplastic material using an extruder which is provided with an extruder die having an inner core, the inner core defining a hollow space in the preform, wherein the preform is subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a mandrel, which mandrel comprises an expansion part, which brings about expansion in the circumferential direction of the preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in the axial direction and the circumferential direction of the tube, wherein said biaxially oriented tube is cooled, which method comprises the use of multiple preform speed-control means which act on the preform and are arranged at a distance from one another between the extruder and the expansion part of the mandrel, which preform speed-control means each maintain an associated preform advancement speed of the preform, in such a manner that the preform, in between the said preform speed-control means, is axially stretched, thereby reducing the wall thickness of the preform, which method further comprises the use of a drawing device which acts on the tube downstream of the mandrel, which drawing device sets an adjustable tube advancement speed of the tube downstream of the mandrel, the improvement including the measure that the preform, in between the preform speed-control means, is moved through a calibration opening of a calibration device, which calibration device reduces the external diameter of the preform.

23. An improved method for producing a biaxially oriented tube from thermoplastic material, in particular polyolefin plastics material, wherein a tubular preform is extruded from thermoplastic material using an extruder which is provided with an extruder die having an inner core, the inner core defining an axial hollow space in the preform, wherein the preform is

subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a dimensionally stable mandrel, which mandrel comprises an expansion part having an outer surface which substantially corresponds to the surface of a truncated cone, which mandrel brings about expansion of the tempered preform in the circumferential direction of the tempered preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in axial direction and in circumferential direction of the tube, wherein said biaxially oriented tube is cooled, the method comprising the use of a preform speed-control means which acts on the preform upstream of the mandrel and of a drawing device which is arranged downstream of the mandrel and acts on the tube,
the improvement including the measure that the outer surface of the expansion part of the mandrel is provided, at a plurality of locations around the circumference of the expansion part, with elongate grooves and/or ribs which extend in the axial direction.

24. A method according to claim 23, wherein a film of liquid is formed between the expansion part of the mandrel and the preform.

25. A method according to claim 22, in which the expansion part is provided with axial grooves which are formed at regular angular intervals, preferably of between 3° and 10°, in the outer surface of the expansion part, and in which the grooves are preferably at most 5 millimetres deep, particularly preferably between 0.5 and 3 millimetres deep.

26. An improved method for producing a biaxially oriented tube from thermoplastic material, in particular polyolefin plastics material, wherein a tubular preform is extruded from thermoplastic material using an extruder which is provided with

an extruder die having an inner core, the inner core defining an axial hollow space in the preform, wherein the preform is subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a mandrel, which mandrel comprises an expansion part, which mandrel brings about expansion of the tempered preform in the circumferential direction of the tempered preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in axial direction and in circumferential direction of the tube, wherein said biaxially oriented tube is cooled, the method comprising the use of a preform speed-control means which acts on the preform upstream of the mandrel and of a drawing device which is arranged downstream of the mandrel and acts on the tube,
the improvement including the use of a plurality of drawing devices, which are arranged one behind the other and drive the tube at the same speed.

27. An improved method for producing a biaxially oriented tube from thermoplastic material, in particular polyolefin plastics material, wherein a tubular preform is extruded from thermoplastic material using an extruder which is provided with an extruder die having an inner core, the inner core defining an axial hollow space in the preform, wherein the preform is subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a mandrel, which mandrel comprises an expansion part, which mandrel brings about expansion of the tempered preform in the circumferential direction of the tempered preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in axial direction and in circumferential direction of the tube, wherein said biaxially oriented tube is cooled,

the method comprising the use of a preform speed-control means which acts on the preform upstream of the mandrel and of a drawing device which is arranged downstream of the mandrel and acts on the tube,
the improvement including the measure that the tube is internally supported at the location where a drawing device acts.

28. A method according to claim 27, wherein use is made of mechanical support means which, at the location where the drawing device acts, comprise one or more support surfaces which move with the tube and bear against the inside of the tube.

29. An improved method for producing a biaxially oriented tube from thermoplastic material, in particular polyolefin plastics material, wherein a tubular preform is extruded from thermoplastic material using an extruder which is provided with an extruder die having an inner core, the inner core defining an axial hollow space in the preform, wherein the preform is subjected to a temperature conditioning of the preform, so that a tempered preform is obtained having an orientation temperature which is suitable for the thermoplastic material of said preform, and wherein the tempered preform is forced over a mandrel, which mandrel comprises an expansion part, which mandrel brings about expansion of the tempered preform in the circumferential direction of the tempered preform forced over said mandrel, in such a manner that said preform is transformed into a biaxially oriented tube with thermoplastic material which is oriented in axial direction and in circumferential direction of the tube, wherein said biaxially oriented tube is cooled,
the method comprising the use of a preform speed-control means which acts on the preform upstream of the mandrel and of a drawing device which is arranged downstream of the mandrel and acts on the tube,
the improvement including the measure that a drawing device comprises one or more tube-engagement members which can each be moved an axial distance to and fro and act on part of the tube so as to deform the tube and grip the tube, an axial

displacement mechanism being associated with each tube-engagement member in order to displace the said member and the tube fixed therein in the axial direction.